

REMARKS

1) Claims 1, 10, 12, 23, and 37 are amended as shown above. Claims 7, 18, 29, and 34-36 are cancelled. It is urged that all grounds of rejection and objection are now overcome, in view of the amendments and arguments herein.

2) The Examiner has objected to the drawings under 37 C.F.R. 1.83(a), stating that the drawings fail to show how the steel channel beams of Figs. 8A, 8B, 9, and 10 relate to drawings 1-7. Specifically, the Examiner asserts that it would be impossible to ascertain where these beams would be located in Figs. 1-7. Applicants respectfully disagree. It is urged that one skilled in the art would clearly and easily be able to ascertain that the inventive structures of Figs. 1-7 contain such beams, and that Figs. 8A, 8B, 9, and 10 merely provide close-up views of certain beam structures or arrangements. Specifically, Figs. 8A and 8B provide beams have a U-shaped or C-shaped cross-section. These beams are further described at page 30, lines 4-9. Importantly, the specification at page 15, line 10, states that the central core floor 41 (see Fig. 2) contains such beams which are C-shaped or U-shaped. Such a core floor 41 is shown in several of the drawings, including Figs. 2, 3, 4, 6, and 7. Thus, it would be easy for one skilled in the art to understand that any of these embodiments would include beams having the structures shown in Figs. 8A or 8B. Fig. 9 shows how adjacent rafter beams 156, 158 are arranged, i.e., with their edge flanges cut away and one beam resting on the other prior to bolting together. The specification, at page 19, lines 11-13, states that the house is comprised of a number of separate trusses, each fabricated from rafters. At page 20, on lines 23-25, it is stated that Fig. 2 shows lower roof sections 51 and 52 that comprise steel rafters. It would thus be easy for one skilled in the art to understand that the lower roof sections 51 and 52 of Fig. 2 may comprise the rafter beams 156, 158 of Fig. 9. Components 51 and 52 are further shown in Figs. 3, 5, and 7. Next, Fig. 10 shows the interlocking arrangement of a stud 160 to a beam 162, prior to the stud and beam being bolted together. This is likewise described in the specification in such a way that one skilled in the art could ascertain its position in the previous figures. For example, page 17, lines

11-13 of the specification states that the core walls each comprise a plurality of steel studs. Page 18, lines 10-21 state that each pivoting exterior wall of Fig.4 (front wall 71, rear wall 72 and side walls 91, 92, 93 and 94) is specifically fabricated from steel studs. In addition, page 24, lines 21-23 state that each of the interior walls of Fig.4 (101-104 and 108-112) comprise horizontal studs. Thus, it is urged that one skilled in the art would understand that a multitude of walls shown in Figs. 1-7 may comprise the studs of Fig.10. For all of the above reasons, it is respectfully submitted that one skilled in the art would readily ascertain where in drawing Figs. 1-7 the beams of Figs.8A, 8B, 9, and 10 are located.

The Examiner has further objected to the drawings under 37 C.F.R. 1.83(a), stating that the drawings fail to show a three-story as described in claim 23. Applicants note that Fig.7 shows a multi-story structure having two stories. As can be readily appreciated by those skilled in the art, multi-story structures in excess of two stories, such as three stories, can be easily constructed in a similar manner.

It is noted with appreciation that in a telephone conversation with Examiner Jason Holloway on June 22, 2009, he agreed that corrected drawings are not necessary at this time, and the objections to the drawings would be removed upon the written statements made above.

3) The Examiner next objected to claims 10 and 23 for containing the typographical errors described in the Office Action. As suggested by the Examiner, claim 10 has been amended to correct the phrase "the core roof section comprises a plurality of further comprises a plurality of metal" to now read "the core roof section further comprises a plurality of metal". Regarding claim 23, this claim has been amended as suggested by the Examiner, to remove the duplicated paragraphs at lines 14-27 on page 41. It is urged that the objections to claims 10 and 23 have been overcome by the above amendments, and should be withdrawn.

4) The Examiner asserts that should claims 31-33 be found allowable, claims 34-36 will be objected to as being a substantial duplicate thereof. Accordingly, claims 34-36 are hereby cancelled.

5) The Examiner has rejected claims 1-36 under 35 U.S.C. 103 over Colvin (US 4,660,332) in view of Nystrom (3,146,864). The Examiner takes the position that it would have been obvious for one skilled in the art to combine these references and produce the presently claimed invention. Applicants respectfully urge that this is not the case, and that this ground of rejection is overcome by the instant amendment.

The present invention relates to prefabricated folding structures having floor, wall, and roof members that fold inwardly upon itself to produce a compact folded transportable structure. The present claims, as amended, provide a prefabricated folding structure comprising:

- a generally rectangular central core comprising a plurality of core walls, a core floor section connected to and extending between the core walls at a base of the core walls, and a core roof section connected to and over the core walls and over the core floor section; each of said core walls, core floor section and core roof section comprising a plurality of spaced metal channel beams having at least one flat side;

- a plurality of folding rooms attached to the central core; each folding room comprising a plurality of room wall members, a folding room floor section removably attached to and extending between the room walls at a base of the room walls and a folding a room roof section removably attached to and extending over the room wall members and extending over the room floor section; each of the room wall members, the room floor section and the room roof section comprising a plurality of spaced metal channel beams having at least one flat side;

- at least one said room floor section being pivotally connected at one end thereof to said core floor section; at least said one room roof section being pivotally connected at one end thereof to said core roof section; said room wall members being removably attached to said room floor section and said room roof

section; each room roof section being pivotably connected to the core roof section on the same side of the central core as each room floor section is connected to the core floor section;

wherein each folding room floor section and each folding room roof section may be alternately detached from its room wall members and pivoted inwardly toward said central core and positioned in close proximity to and substantially parallel to a corresponding core wall and thereby form a compact folded structure, or pivoted outwardly away from said central core to define a room adjacent to said central core when attached to its room wall members; and

wherein said core walls and room wall members further comprise a plurality of spaced metal channel studs having at least one flat side, wherein at least one of said metal channel studs is positioned within a notch cut into an edge flange of a metal channel beam of at least one core wall or room wall member, and wherein an end of the metal channel stud rests on an opposite edge flange of the metal channel beam.

Additional embodiments of the invention provide multi-story prefabricated folding structures similarly formed, but having two, three, or more levels stacked upon each other.

The Colvin reference provides a prefabricated folding structure. However, it is urged that the cited references fail to teach or suggest several required features of the improved structure provided by the presently claimed invention. Specifically, the present invention requires that the core floor section, core roof section, room wall members, room floor section, and room roof section comprise a plurality of spaced *metal channel beams*. Certain embodiments additionally require that the core walls and room wall members further comprise a plurality of spaced *metal channel studs*. Such metal beams and studs are not taught by Colvin. Rather, as the Examiner agrees, Colvin provides wooden beams and wooden studs which are assembled to form a foldable structure. It is urged that the presently claimed structures having *metal* beams would clearly be more durable than Colvin's wooden structures. It is known that structures having a wooden framework

may become infested with termites, or may easily become warped or damaged if exposed to elements such as wind and water. While certain wooden components such as plywood flooring may be easily replaceable, replacing the wooden *framework* of a structure would be very costly and time consuming. Thus, the use of a metal framework in the presently claimed invention is advantageous and desirable. Clearly though, the size, shape, positioning, and other parameters of the presently required metal beams and studs must be particularly chosen such that they do not hinder the foldability or portability of the overall structure.

As shown above, the present claims are amended to now require that the core walls and room wall members further comprise a plurality of spaced *metal channel studs*. It is required that at least one of these metal channel studs is positioned within a notch cut into an edge flange of a metal channel beam of at least one core wall or room wall member, and an *end* of the metal channel stud rests on an opposite edge flange of the metal channel beam. It is urged that this *wall* arrangement having a metal stud positioned within the metal beam provides enhanced strength to both the walls and the overall structure, and is not taught or even contemplated in the cited art. Support for the above amendment is provided in Fig.10, as well as in the specification at page 30, lines 4-23 and in the originally filed claim 7, which is now cancelled. Support for changes to claims 12 and 23 are further found in the originally filed claims 18 and 29, respectively, which are now cancelled. Applicants urge that Colvin does not teach or suggest that any of their walls have such a stud arrangement at all, much less containing the metal channel beams and studs arranged as presently required.

The Examiner has agreed that Colvin fails to teach a structure which comprises a plurality of metal channel beams (see page 7 of the Office Action). Thus, the Examiner cites Nystrom for disclosing a building made of metal beams. However, it is urged that while Nystrom does relate to metal buildings, it does not provide *any* teaching or suggestion that their metal building arrangements would or could be used in formulating a *folding* or *portable* structure. Nystrom indeed uses metal channel beams in their construction. However, their structure is *rigid* and is intended to be *permanently* located

at the site where it is assembled. This is evidenced by the use of concrete in their assembly process, wherein their columns 10 are filled with concrete 12 (see Fig.1). In addition, Nystrom does not teach any embodiment where their metal beams are *pivotable* or *detachable* at all. It is submitted that neither Nystrom's arrangement of materials nor their selection of materials would be sufficient for forming a structure having components which are pivotable or detachable in the manner presently required. Thus, it is respectfully urged that the Examiner is looking beyond the teachings of the references and is incorrectly *inferring* that the metal beam structure of Nystrom could be used in forming a foldable, portable product. Further, regarding the amendments to the present claims, it is urged that Nystrom does not provide a *wall* arrangement as presently claimed and as shown in Fig.10, wherein a stud is inserted within a notch cut into the side edge flange of a metal channel beam, wherein an *end of the stud* rests on an opposite edge flange of the metal channel beam. Indeed Nystrom provides a *roof* arrangement in their Figs.17-19 wherein two rafter beams are slotted at their ends, which Nystrom refers to as "notched". However, these "notches" are actually metal flap-like structures formed in the ends of the beams of Nystrom. These flaps are structurally *weak* and subject to *metal fatigue*, a clearly undesirable consequence. In contrast, the present invention requires that a structurally strong, un-modified end of a metal channel stud directly abuts a flange of a metal channel beam, in an arrangement which avoids metal fatigue and actually enhances the strength of the structure. Again, this required arrangement is not taught or suggested by Nystrom or Colvin. Thus, it is urged that even upon a hypothetical combining of Colvin and Nystrom, the presently claimed invention as amended herein is not taught or suggested by the cited art.

Regarding the dependent claims, it is submitted that each of these claims relate to a *narrower* embodiment than those of the independent claims 1, 12, and 23. Thus, where the independent claims are sufficiently inventive in view of the cited references for the reasons stated above, those claims depending from claims 1, 12, and 23, respectively, should be considered inventive in view of Colvin and Nystrom as well.

For all of the above reasons, it is respectfully urged that the 35 U.S.C. 103 rejection should be withdrawn.

6) The Examiner has rejected claim 37 under 35 U.S.C. 103 over Colvin (US 4,660,332) in view of Nystrom (US 3,146,864) and in further view of Smith (US 5,461,832). Claim 37 relates to a process for forming a prefabricated folding structure. Specifically, a prefabricated folding structure such as that described throughout the specification is assembled on a trailer having wheels such that the assembled structure may be transported. The Examiner asserts that Colvin and Nystrom teach every feature of claim 37 except for a trailer having a rectangular framework and four wheels. In an effort to fill the voids of these references, the Examiner cites Smith for teaching a foldable building with wheels. However, Applicants respectfully submit that the combination of these three references still fails to obviate the presently claimed invention.

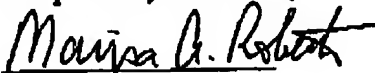
First, the arguments against the Colvin and Nystrom references are repeated from above and apply equally here. Specifically, Colvin relates to a foldable structure which is assembled from wooden beams and wooden studs. This differs from the present invention which specifically requires that the core floor section, core roof section, room wall members, room floor section, and room roof section comprise a plurality of spaced *metal channel beams*. Certain embodiments additionally require that the core walls and room wall members further comprise a plurality of spaced *metal channel studs*. Such metal beams and studs are not taught by Colvin. In addition, Colvin fails to teach the wall arrangement now required by the presently amended claims, wherein the core walls and room wall members comprise a plurality of spaced metal channel studs, and wherein at least one of the studs is positioned within a notch cut into an edge flange of a metal channel beam of at least one core wall or room wall member, and wherein an end of the metal channel stud rests on an opposite edge flange of the metal channel beam. Nystrom also fails to teach or suggest this required wall arrangement, which enhances the structural integrity of the present invention. While Nystrom is cited for teaching a metal building structure, it is urged that neither Nystrom's arrangement of materials nor their selection of materials would be sufficient for forming a structure having components

which are pivotable or detachable in the manner presently required. That is, the Examiner has no basis for his conclusion that the metal beam structure of Nystrom could be used in forming a foldable, portable product. It is urged that one skilled in the art would not have been motivated to incorporate the permanent, rigid structure of Nystrom's buildings into the foldable, portable product of Colvin in an effort to formulate the presently claimed invention. Further, it is urged that even upon such a combining, the present claims would fail to be obviated by Colvin and Nystrom.

While Smith does teach a transportable folding building which may be formed on a trailer, this reference fails to overcome the deficiencies of the Colvin and Nystrom references. That is, like Colvin and Nystrom, this reference fails to teach or suggest a prefabricated folding structure having the required features of the presently amended claims. Thus, even if one were to combine the trailer of Smith with the teachings of Colvin and Nystrom, the present claims would still fail to be obviated for the reasons stated above. Applicants therefore respectfully request that the 35 U.S.C. 103 rejection of claim 37 has been overcome, and should be withdrawn.

The undersigned respectfully requests re-examination of this application and believes it is now in condition for allowance. Such action is requested. If the Examiner believes there is any matter which prevents allowance of the present application, it is requested that the undersigned be contacted to arrange for an interview which may expedite prosecution.

Respectfully submitted,



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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office (FAX No. 571-273-8300) on June 24, 2009.


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